CLAIMS:

What is claimed is:

1. A traceable treatment composition for treating a subterranean formation having multiple zones penetrated by a well bore comprising:

a tracking material, wherein the tracking material is substantially non-radioactive and is selected from the group consisting of water-soluble inorganic salts, water soluble organic salts, metals, metal salts of organic acids, metal oxides, metal sulfates, metal phosphates, metal carbonates, metal salts, phosphorescent pigments, fluorescent pigments, photoluminescent pigments, oil soluble dyes, oil dispersible dyes and oil dispersible pigments.

2. A traceable treatment composition according to claim 1 further comprising a treatment fluid selected from the group consisting of fracturing fluids, drilling fluids, disposal fluids and injection fluids.

3. A traceable treatment composition according to claim 1 wherein the tracking material comprises a water soluble inorganic or organic metal salt.

4. A traceable treatment composition according to claim 3 wherein the water soluble inorganic or organic metal salt comprises a metal selected from Groups I to VIII of the Periodic Table of the elements and the lanthanide series of rare earth metals;

provided that the metal salt is not a component of the treatment compositions; and

provided that the metal salt is compatible with the fluids disposed within the well bore.

5. A traceable treatment composition according to claim 4 wherein the metal is selected from the group consisting of barium, beryllium, cadmium, chromium, cesium, sodium, potassium, manganese and zinc.

6. A traceable treatment composition according to claim 3 wherein the metal salt is selected from the group consisting of barium bromide, barium iodide, beryllium fluoride, beryllium bromide, beryllium chloride, cadmium bromide, cadmium chloride, cadmium iodide, cadmium nitrate, chromium bromide, chromium chloride, chromium iodide, cesium bromide, cesium chloride, sodium bromide, sodium iodide, sodium nitrate, sodium nitrite, potassium iodide, potassium nitrate, manganese bromide, manganese chloride, zinc bromide, zinc chloride, zinc iodide, sodium monofluoroacetate, sodium trifluoroacetate, sodium 3-fluoropropionate, potassium monofluoroacetate, potassium trifluoroacetate, potassium 3-fluoropropionate.

7. A traceable treatment composition according to claim 1, wherein the treatment composition further comprises a particulate material associated with the tracking material, and wherein the tracking material comprises a metal selected from Groups I to VIII of the Periodic Table of the elements and the lanthanide series of rare earth metals;

provided that the metal is not a component of the particulate material; and

provided that the metal is compatible with the fluids disposed within the well bore.

8. A traceable treatment composition according to claim 1, wherein the treatment composition further comprises a particulate material associated with the tracking material, and wherein the tracking material is selected from the group consisting of metals, metal oxides, metal phosphates, metal carbonates, metal salts and derivatives thereof, and wherein the metal or metal portion is selected from the group consisting of gold, silver, copper, aluminum, barium, beryllium, cadmium, cobalt, chromium, iron, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, lead, titanium, vanadium and zinc.

9. A traceable treatment composition according to claim 8, wherein the tracking material comprises a metal selected from the group consisting of copper, nickel, zinc, cadmium, magnesium and barium.

10. A traceable treatment composition according to claim 8, wherein the tracking material comprises a metal oxide selected from the group consisting of manganese oxide, cuprous oxide, zinc oxide, magnesium oxide, and barium oxide.

11. A traceable treatment composition according to claim 1, further comprising a particulate material associated with the tracking material, and wherein the tracking material is selected from the group consisting of metal salts, metal oxides, metal sulfates, metal phosphates and metal salts of organic acids and the metal portion is selected from the group consisting of chromium, molybdenum, tungsten, manganese, technetium, rhenium, lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium.

12. A traceable treatment composition according to claim 1, further comprising a particulate material associated with the tracking material, and wherein the tracking material is selected from the group consisting of phosphorescent pigments, fluorescent pigments and photoluminescent pigments, and wherein the phosphorescent, fluorescent, and photoluminescent pigments are prepared from materials selected from the group consisting of alkaline earth aluminates activated by rare earth ions, zinc sulfide phosphors, aluminate phosphors, zinc silicate phosphors, zinc sulfide cadmium phosphors, strontium sulfide phosphors, calcium tungstate phosphors and calcium sulfide phosphors.

13. A traceable treatment composition according to claim 1, further comprising a particulate material associated with the tracking material, and wherein the particulate material is selected from the group consisting of fibrous materials, tackifying agents and deformable beads.

14. A traceable treatment composition according to claim 1, further comprising:
a tracking material-resin mixture formed by blending the tracking material with a resin; and
a particulate material coated with the tracking material-resin mixture.

15. A traceable treatment composition according to claim 1, further comprising a particulate material tagged with the tracking material.

16. A traceable treatment composition comprising:

a tracking material, wherein the tracking material comprises a metal salt of an organic acid and wherein the organic acid is selected from the group consisting of substituted and unsubstituted alkanoic carboxylic acids, alkenoic carboxylic acids, polyunsaturated aliphatic monocarboxylic acids and aromatic carboxylic acids.

17. A traceable treatment composition according to claim 16, wherein the organic acid comprises an alkanoic carboxylic acid having from 5 to 35 carbon atoms.

18. A traceable treatment composition according to claim 16, wherein the organic acid comprises an alkenoic carboxylic acid having from 5 to 30 carbon atoms.

19. A traceable treatment composition according to claim 16, wherein the organic acid comprises a polyunsaturated aliphatic monocarboxylic acid selected from the group consisting of sorbic acid, linoleic acid, linolenic acid and eleostearic acid.

20. A traceable treatment composition according to claim 16, wherein the organic acid comprises an aromatic acid selected from the group consisting of benzoic acid, salicylic acid, cinnamic acid and gallic acid.

21. A proppant composition comprising a particulate material associated with a tracking composition, wherein the tracking composition comprises a substantially non-radioactive tracking material selected from the group consisting of water soluble inorganic salts, water soluble organic salts, metals , metal salts of organic acids, metal oxides, metal sulfates, metal phosphates, metal

carbonates, metal salts, phosphorescent pigments, fluorescent pigments, photoluminescent pigments, oil soluble dyes, oil dispersible dyes and oil dispersible pigments.

22. A proppant composition according to claim 21, wherein the tracking material comprises a metal selected from Groups I to VIII of the Periodic Table of the elements and the lanthanide series of rare earth metals;

provided that the metal is not a component of the particulate material; and

provided that the metal is compatible with the fluids disposed within the well bore.

23. A proppant composition according to claim 21, wherein the tracking material is selected from the group consisting of metals, metal oxides, metal phosphates, metal sulfates, metal carbonates, metal salts, and derivatives thereof, and wherein the metal or metal portion is selected from the group consisting of gold, silver, copper, aluminum, barium, beryllium, cadmium, cobalt, chromium, iron, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, lead, titanium, vanadium, and zinc.

24. A proppant composition according to claim 23, wherein the tracking material comprises a metal selected from the group consisting of copper, nickel, zinc, cadmium, magnesium and barium.

25. A proppant composition according to claim 23, wherein the tracking material comprises a metal oxide selected from the group consisting of manganese oxide, cuprous oxide, zinc oxide, magnesium oxide, and barium oxide.

26. A proppant composition according to claim 23, wherein the tracking material is selected from the group consisting of metal salts, metal oxides, metal sulfates, metal phosphates and metal salts of organic acids and the metal portion is selected from the group consisting of chromium, molybdenum, tungsten, manganese, technetium, rhenium, lanthanum, cerium, praseodymium, neodymium,

promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium.

27. A proppant composition according to claim 26, wherein the tracking material comprises a metal salt of an organic acid and the organic acid is selected from the group consisting of substituted and unsubstituted alkanoic carboxylic acids, alkenoic carboxylic acids, polyunsaturated aliphatic monocarboxylic acids and aromatic carboxylic acids.

28. A proppant composition according to claim 21, wherein the tracking material is selected from the group consisting of phosphorescent pigments, fluorescent pigments and photoluminescent pigments and wherein the phosphorescent, fluorescent, and photoluminescent pigments are prepared from materials selected from the group consisting of alkaline earth aluminates activated by rare earth ions, zinc sulfide phosphors, aluminate phosphors, zinc silicate phosphors, zinc sulfide cadmium phosphors, strontium sulfide phosphors, calcium tungstate phosphors and calcium sulfide phosphors.